SONY

**Sony Electronics Incorporated**, Technology Center San Diego
16450 West Bernardo Drive, San Diego, CA 92127-1804

**Commissioner Robert A. Laurie, Presiding**
**Commissioner Robert Pernell, Associate**
**Efficiency Committee**
**California Energy Commission**
**1516 Ninth Street**
**Sacramento CA 95814-5512**

**Subject: PRELIMINARY STAFF DRAFT OF REVISED APPLIANCE REGULATIONS (Docket No. 98-A&B-1)**

The attached documents are for use/presentation at the Workshop regarding proposed Appliance Energy Regulations.

The first document is a general position document from Sony Electronics, Inc.

The second document is a slightly technical discussion with product and associated measurement data supporting Sony Electronics, Inc. position.

The third document is a copy of the Federal Register in which the Department of Energy withdrew the CFR 10 requirement for televisions on page 3.

I plan to attend the workshop on September 2, 1999 in Sacramento California to answer any questions by the Committee.

Best regards,

David L. Traver
Director of Product Quality
Sony Electronics, Inc.
San Diego Technology Center
16450 West Bernardo Drive
San Diego, CA 92127

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**Subject: PRELIMINARY STAFF DRAFT OF REVISED APPLIANCE REGULATIONS (Docket No. 98-A&B-1)**

Dear Mr. Laurie and Pernell,

Sony Electronics, Inc. ("SEL") appreciates the opportunity to comment on the California Energy Commission's ("the Commission") proposal to update regulations affecting the energy consumption of appliances (Docket No. 98-A&B-1). As a leader in energy efficient design for home electronics and computer displays, Sony set industry benchmarks for energy consumption in televisions and computer displays. More than 1,000 of our 5,000 California-based employees are directly involved with the engineering, design, manufacture, sale and service of technologies that could be affected by this rulemaking.

Sony Electronics Inc. supports the energy efficiency objectives established by the California Energy Commission, the National Appliance Energy Conservation Act, the US Department of Energy (DoE), and the US Environmental Protection Agency (EPA). Because of this, we cannot support the above-referenced rulemaking because it undermines the goal of reducing energy consumption, utilizes outdated test methods and puts us in conflict with other federal mandates and consumption commitments. We are especially concerned because enactment of this proposal will limit California-based consumers to purchasing products with limited functionality and features and slow the transition to digital television. Consumers trending towards feature-rich digital products for which no state standards exist will be forced to buy multiple products to achieve the same outcome, buy marginal products, or make purchases of products manufactured and sold outside California.

The draft Commission proposal relies on the US DOE standards for energy consumption for televisions as defined in CFR 10. These standards were in fact withdrawn in 1996 (see Federal Register, July 15, 1996 Vol 61, Number 136 (FR15JY96-14)) because they failed to meet National Appliance Energy Conservation Act obligations. Instead, the US government now relies on government-sponsored voluntary initiatives and competitive market forces to encourage efficient appliances. Under this market-based model, companies continuously strive to set new industry standards and have the flexibility to update products to include technological advances. Sony Electronics is a partner in a number of these initiatives, including the EPA's Energy Star program. Because of our leadership, EPA recently named SEL "Energy Star Partner of the Year for Home Electronics" because we voluntarily reduced power consumption on most projection screen and direct view televisions. Under our new design, consumption is reduced from an ***average of six watts to just one watt (True?)*** without compromising consumer features.

Like SEL, most major television manufacturers are EPA Energy Star partners. Because of this, competitive market forces and basic economics require companies to reduce power consumption as soon as it is economically feasible. DOE recognized this and studies conducted by ***What does LBNL stand for ?*** ("LBNL") indicate that reduced power consumption and increased energy efficiency directly translate into increased product reliability. In fact, according to ***site for statistics,*** energy consumption of television models offering comparable performance dropped more than 80% between 1967 and 1993. And, a basic 20 inch model television receiver today uses only as much energy during viewing as a standard 60 to 100 watt light bulb with an average life of eleven years.

As companies like Sony Electronics reinvent the digital appliance, adding Internet search capability and two-way communications, we will most certainly find the Commission's standard an innovative limit that is fundamentally inconsistent with our obligations to EPA and to other federal agencies charged with rolling out digital television. By allowing multiple digital functions to coexist in a television receiver, Sony Electronics believes the American public will have a cost effective and energy efficient way to access information and view programs. The Commission's measurement and reporting requirement for television receivers would put television manufacturers at a disadvantage in this transition, resulting in stripped-down sets with degraded display performance. In order to meet the standards, desirable features like digital multimedia would migrate from the receiver to products like set top boxes that have a separate power source. This strategy would increase overall energy consumption and make little economic sense to manufacturers.

We urge the Committee to withdraw its proposed mandate and make an affirmative determination that a statutory standard is neither appropriate nor necessary.

Thank you again for your interest and hearing our concerns about this important matter. I would be pleased to provide you with additional information on our Company's facilities, products and plans directly affected by this proposed ruling.

David L. Traver
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San Diego, CA 92127

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**Sony Electronics Incorporated**, Technology Center San Diego
16450 West Bernardo Drive, San Diego, CA 92127-1804

**Date:** August 25, 1999

**To:** California Energy Commission Committee

**From:** David Traver – Sony Electronics

**Subject:** Proposed CEC regulations:
Technical arguments against CFR10 and/or similar proposals. The following data is provided to clarify positions against regulations based on technical studies performed by Sony Electronics, Inc. and other agencies as noted.

## 1. The proposed standard does not meet the requirements or intent of the National Appliance Energy Conservation Act.

The CEC rule, if based on CFR 10/DOE/LBNL proposal, will fail the most basic requirement of the National Appliance Energy Conservation Act because it will not result in conservation of energy. If enacted energy consumption will most likely increase rather than decrease. For the reasons cited below which were presented to the DOE during hearings in 1994 and 1995, the requirement was withdrawn (FR15JY96-14) Federal Register July 15, 1996 Vol 61, Number 136.

The energy standard, in the proposed Federal rules, was based on the lowest energy consumption found in a small group of now obsolete 1987 television models. Market competition, safety considerations, Federal functionality requirements (Closed Captioning, V-Chip, Emergency Warning Systems etc.) and technological improvements are already producing the maximum improvement of energy efficiency feasible. Between 1967 and today, energy requirements of the typical 20" television have been reduced by over 80%. This improvement continues despite the continual addition of features and steady improvement of picture and sound quality.

Today's consumers have access to higher quality picture sources thanks to advances in broadcast, satellite and digital technologies such as DVD's and ATSC digital TV broadcasts. The proposed standard is based on the assumption that by eliminating functions and reducing picture brightness, consumers will accept these reduced performance products because of the associated minimal energy savings. This simply will not happen. The consumer will select televisions with brighter pictures, higher resolutions and more diverse inputs and features to meet their future needs.

Put into another context, the proposed regulation is to a television what replacing a 100-watt light bulb with a 50-watt light bulb is to room lighting. If a 100 watts of light is needed in a room, installing a 50-watt light bulb does not make the room lighting any more efficient. It reduces the performance and utility of the room lighting and makes it

more difficult to read and therefore encourages the occupant to add additional lighting to achieve the appropriate functional lighting level.

The proposed rules if adopted, would severely lessen the utility and performance of televisions in California. It would force manufacturers to produce a lower quality product for the California market in order to get a "better energy rating " to achieve sales in California. Consumer needs and market forces would then produce incentives to develop external devices that will achieve desired functionality in unregulated external boxes. Increased energy consumption and costs of additional boxes and limited television performance would be the result for the California consumer.

**2. The measurements and assumptions used by DOE/LBNL in developing the proposed standards are technically flawed.**

The proposed DOE regulation was based on data gathered from low-end sets. The measured, then calculated total energy consumption an annual basis for each set was to be reported. This was based on brightness (more properly luminance) for each Screen Size without regard to features or overall critical measurements of picture quality. Set performance cannot be effectively measured, nor standards established by simply using stand-by plus "average brightness" methodology.

**a. Average Power use is not equal to technological achievable levels.**

Use factors, set performance and design must be considered to measure efficiency. The DOE/NIST/LBNL test procedures were not a measure of efficiency, but were merely a histogram of average annual power use per set. NIST/DOE/LBNL did not determine efficiency of sets in the critical area of Video or CRT deflection. Their sampling methodology was also incorrect in determining "average annual power". To measure an individual set's average power consumption, several sets of the same model must be measured to determine a statistical baseline. In fact the DOE would require manufacturers to utilize this method to determine compliance but did not follow the practice in their own study.

**b. Incorrect Engineering assumptions supporting DOE estimated "white / black performance is not merely a "large uncertainty" but is invalid.**

The histogram of the DOE/NIST/LBNL sample versus Energy used (kWh/yr) average power consumption is not efficiency related but are direct relationships to color television picture quality and feature packages. The data provided "White / Black" power levels but nothing on typical picture quality data. Specifically, what were the white levels of the CRT face? Were they balanced so that each set achieved an equal level of luminance (usually measured in degrees Kelvin)? The data provided by DOE/NIST is invalid because the sample sets had different brightness and picture levels. Manufacturers could ship sets with low brightness settings and achieve lower measurement numbers, but offer the consumer the ability to adjust and defeat the purpose of saving energy.

The DOE/NIST/LBNL report indicates a lack of understanding of basic television circuits such as Beam and deflection and functionality. The DOE's statement was that this area was a "large uncertainty". The use of Black/White methodology in simple terms is a measure of beam current only (from highest to lowest beam current). This white

raster is typically measured as Picture Temperature. The DOE does not give the figure in its technical report, but the average power that must be reduced is 18.6 watts at full beam current (white) and 10.6 watts at no beam current (black). DOE suggests deflection might be able to reduce losses. This is not engineering, this is guessing. In the original report, no mention of focus, geometric distortion, clarity, or color accuracy to name a few were measured. To request manufacturers to minimize these features to save energy would mean pictures would be fuzzy, distorted, unclear and off color to save energy consumption. Only brightness would be required. The purpose of a television is not to provide light output. The purpose of a television is to provide visual (and sound) information accurately and would be compromised by any such proposed regulation.

The technologies and methodologies for measuring television performance is well known in the industry. Independent assessments of these performance qualities (like Consumer Reports, Consumer Digest etc.), use commonly accepted measurement practices. Televisions are measured for Picture Quality, Sound Quality and Ease of Use. These factors must be considered in order to measure efficiency. Power consumption as used by the DOE is not a substitute or equal to power efficiency.

Power efficiency has always been a primary design consideration for manufacturers. The DOE did note in its proposal that Linear Power Supplies were much less efficient than Switching Power supplies. Unfortunately, the television selected as “the most technically advanced” by the DOE had a Linear Power Supply simply because it had the lowest average power consumption. Again, using power consumption only as a measure of efficiency leads to selection of an in-efficient design.

### c. Product Classification is insufficient and restrictive.

The classification of products is not sufficient to determine customer use, features required and subsequent power needs. Typically major manufacturers produce several levels of products for each size category, with product performance at each level showing a direct relationship to power consumption and efficiency. Each level is optimized for feature package and operation intended. Further, classifications do not take into consideration power requirements for display products that combine features (and therefor improve power efficiency and reduce total power consumption). An example is the integrated TV/VCR combination unit that uses one power supply. Any regulation proposed would require constant update to add new categories of efficient products. It is likely that rather than report a higher annual energy usage, manufacturers would not be inclined to combine features.

### d. Use of an annual energy consumption will cause consumer confusion

The DOE conclusion, using their own study data combined with LBLN, classified "the most energy efficient set" was the most advanced set because used the "least power" (UEC). The set selected was of the lowest picture, sound and feature quality. However, it did use the least power on an annualized basis using the DOE measurement methodology. When industry found the model listed by DOE/LBNL studies, the consumer who owned it gladly gave it up for a higher quality set of the same inch size.

Please refer to the following feature map of the differences in set performance for the sets used in the LBNL/DOE study:

| FEATURES | | SONY KV20V50 | SONY KV20V50 | SONY KV20S10 | Goldstar | RCA | Sharp |
|---|---|---|---|---|---|---|---|
| | | Lion CRT | Trinitron | Lion CRT | | | |
| Screen Size - Inches | | 20 | 20 | 20 | 20 | 19 | 19 |
| Micro Black Tube | | | X | | | | |
| Color Pure Filter | | X | X | X | | | |
| Dynamic Picture Processor | | X | X | X | | | |
| Wide Band VIF | | X | X | X | | | |
| MTS Stereo decoder | | X | X | | | | |
| Remote Control | | X | X | X | X | X | X |
| Electronic Tuning | | X | X | X | X | X | X |
| Auto Channel Programming (181 ch) | | X | X | X | X | X | |
| Cable Compatible | | X | X | X | X | X | |
| Video Identification | | X | X | | | | |
| Channel Guide | | X | X | | | | |
| Channel Caption | | X | X | X | | | |
| A/V Menu | | X | X | X | | | |
| A/V Memory | | X | X | X | | | |
| Timer/ Sleep Function | | X | X | | | | |
| Channel Block | | X | X | | | | |
| Closed Caption | | X | X | X | X | X | |
| Audio Video Inputs | | 3 | 3 | 1 | | | |
| S-Video Input | | 1 | 1 | | | | |
| Fixed or Variable Sound output | | X | X | | | | |
| Switching Power Supply | | X | X | X | Not known | Not known | |
| 12VDC XFMR | | X | X | X | | | |
| 5VDC XFMR | | X | X | X | | | |
| Linear Power Supply | | | | | | | X |
| 12VDC Resistor | | | | | | | X |
| 5VDC Resistor | | | | | | | X |
| **DOE / SONY DATA** | | | | | | | |
| Average Luminance | | 120 | 140 | 124 | 124 | 160 | 108 |
| Standby Power | | 4 | 4 | 4 | 4 | 3 | 3/2 |
| B/W Measurement | | 66 | 72 | 55 | 59 | 65 | 60 |
| Total KWhr/yr | | 170840 | 184640 | 146140 | 156040 | 162680 | 150580 |

Sample Potential features used on other sets:

| **Feature** | |
|---|---|
| Color Pure Filter (Comb Filter) | Signal |
| Dynamic Focus | Deflection Improvement |
| Velocity Modulation Scanning | Deflection Improvement |
| Increased Horizontal resolution | Deflection Improvement |
| Matrix/ Surround Sound | Signal |
| Two Tuner Picture in Picture | Signal |
| PIP with Freeze function | Signal |
| Jump Channel | Control |
| Wireless Infrared Headphones | Signal |
| Audio-Video Monitor Outputs | Signal |
| Speaker outputs | Signal |

**3. The proposed rule will have significant negative impact on the television industry.**

According to the Electronics Industries Association, there are more than 30 U.S. television tube and set production facilities employing more than 30,000 Americans directly and tens of thousands indirectly. This industry serves more than the American marketplace; it is increasingly and exporter of sets and key components to Latin America, Canada and Asia. America's competitive position, the massive installed based of equipment necessary to make competitive televisions into the next millennium, and the prospect of further capital and job creation would be jeopardized by enactment of the proposed CEC rule.

Take Sony as a case in point. When we established our San Diego Manufacturing Center in 1972, we were the first Japanese electronics manufacturer to do so. Thanks to our initial success, other manufacturers were encouraged to follow. Since 1972 we have invested over $600 million in North American television picture tube and set production in San Diego and Pittsburgh.

San Diego has the distinction of opening the first design center – The SONY Technology Center San Diego in 1997, to develop television products for the Americas. This single investment of over $30 million dollars was specifically to meet growing market demand for larger and better quality televisions. San Diego currently employs over 4000 people directly involved in the design and manufacture of televisions.

Regulations at either the State or Federal level that would limit our ability to provide the wide range of high quality energy efficient products to our consumers would be a major disincentive to our operations. We urge the Committee to eliminate televisions from the proposed California Appliance Efficiency regulations.

Respectfully,

David L. Traver
Director of Product Quality
Sony Electronics, Inc.
16450 West Bernardo Drive, San Diego, CA 92127

From: **"Myrick; Wayne" <WMYRICK@sharpsec.com> at ccmail**
**Sent:** Tuesday, August 24, 1999 7:47 PM
**To:** Traver, David
**Subject:** Federal Register


doe_tv.txt


RFC822 message headers.txt

Dave:

Attached is the FR notice I referred to. I bolded the following text in the notice:

“DOE has since withdrawn the proposal to establish standards for television sets. 60 FR 32627 (June 23, 1995). “ If you have trouble opening it by just clicking the icon, save it first and then openit with word. It is a Word6.0 document even though it has a .txt extension.

Wayne

Ref:

[Federal Register: July 15, 1996 (Volume 61, Number 136)]
[Rules and Regulations]
[Page 36973-36987]
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